State of Alaska
FY2008 Governor's Operating Budget

Department of Natural Resources
Geological Development
Component Budget Summary

Component: Geological Development

Contribution to Department's Mission

This component contributes to the Department's mission to develop, conserve, and enhance Alaska's natural resources by collecting, archiving, and distributing the geological information that will catalyze private-sector energy- and mineral-resource exploration and support wise land-use decisions. The mission of the Division of Geological & Geophysical Surveys is clearly defined in statute: "...determine the potential of Alaskan land for production of metals, minerals, fuel, and geothermal resources; the location and supplies of groundwater and construction materials; the potential geologic hazards to buildings, roads, bridges, and other installations and structures…" (AS 41.08)

Core Services

- Functions as the state's lead source and repository of Alaska geologic information and the primary source of information concerning Alaska's energy resources, mineral resources, and geologic hazards.
- Provides the geologic information needed for economic diversification, revenue generation, hazards mitigation, infrastructure development, and resource management in the state of Alaska.
- Plays a strategic role in the generation and maintenance of Alaska's economy through development of its geologic resources, and in the public safety of its citizens with respect to mitigating the risks from natural geologic hazards.
- Stimulates the discovery of minerals, coal, oil, gas, geothermal energy, construction-quality sand and gravel, and water by providing geologic-framework data on which to base industry resource-exploration programs
- Provides geologic data and assessments used by DNR management divisions (Mining, Land & Water; Oil & Gas; Parks & Outdoor Recreation; Agriculture; and Forestry), state departments (e.g., Commerce, Community and Economic Development; Transportation & Public Facilities; Military and Veterans Affairs), and municipalities. Geologic information provided to users outside DNR has been used to catalyze private sector exploration investment, plan natural-hazard mitigation and disaster preparedness in cities and villages, select transportation-corridor lands for Alaska, and to better design roads and other infrastructure.
- Maintains the Geologic Materials Center, Alaska's archive of representative geologic materials from across the state. The collection, representing many millions of dollars in acquisition cost, includes oil- and gas-related samples, mineral-related and coal samples collected by DGGS and donated by industry and numerous Federal agencies. The samples provide the reference collection of materials used by the petroleum and mineral industry to guide new exploration ventures.
- Works collaboratively with the other Divisions in DNR and with Alaska-based federal agencies to make all public sector geologic resource data accessible via the Internet.
- Administers the Alaska Seismic Hazards Safety Commission and publishes its recommendations for improving state and local policies to reduce human casualties and economic losses from earthquakes and tsunamis

End Results	Strategies to Achieve Results
A: Hard-copy and digital geologic reports and maps for use in exploring for and managing energy and mineral resources and for mitigating geologic hazards Target #1: FY07 Target: 700 requests filled for hard-copy geologic publications. Measure #1: Number of requested geologic publications delivered during the fiscal year.	**A1: Produce timely and reliable new energy-related geologic information in areas of poor geologic understanding and high energy resource potential, for both resource development and rural energy consumption** Target #1: FY07 Target: Five reports on energy-related geology of state-interest lands Measure #1: Number of new peer-reviewed geologic reports published during the fiscal year that assist the energy industry and state management agencies in developing conventional energy resources on state-interest lands. Target #2: FY07 Target: One report on unconventional

	gas resource potential of state-interest lands Measure #2: Number of new peer-reviewed reports or datasets released during the fiscal year that provide geologic information on unconventional gas resources. Target #3: FY07 Target: Six presentations on energy-resource geology Measure #3: Number of technical presentations made to industry, public, and government sectors during the fiscal year on energy-resource evaluations. Target #4: FY07 Target: 525 square miles of published, energy-related geologic mapping Measure #4: Number of square miles of new, peer-reviewed, energy-related bedrock geologic mapping published during the fiscal year. **A2: Produce timely and reliable new minerals-related geological and geophysical information in areas of limited information and high minerals resource potential** Target #1: FY07 Target: 240 square miles of published, minerals-related bedrock geologic mapping Measure #1: Number of square miles of new, peer-reviewed, minerals-related bedrock geologic maps published during the fiscal year. Target #2: FY07 Target: 750 square miles of published minerals-related airborne geophysical maps Measure #2: Number of square miles of completed new airborne geophysical maps of minerals-interest lands published during the fiscal year. Target #3: FY07 Target: 240 square miles of published, placer-mineral related geologic mapping Measure #3: Number of square miles of new surficial geologic maps published during the fiscal year that provide geologic information on placer-mineral potential and/or construction-materials resources. Target #4: FY07 Target: Three datasets of minerals-related geologic information made available online Measure #4: Number of legacy or private-sector datasets released during the fiscal year that provide minerals-related geologic information. Target #5: FY07 Target: Two reports on the Alaska minerals industry Measure #5: Number of reports published during the fiscal year providing statistical information on Alaskan mineral industry. Target #6: FY07 Targets: Four presentations on Alaska mineral-resource potential Measure #6: Number of technical presentations made to industry, public, and government sectors during the fiscal year on mineral-resource potential and the status of the Alaskan mineral industry.

End Results	Strategies to Achieve Results
B: Timely online delivery of geological and geophysical information to support resource development, attract new industry and provide pre-disaster hazard mitigation for continued economic growth Target #1: FY07 : 2 million visits (user sessions) Measure #1: Number of users requesting information and data from the DGGS and AVO Web sites.	**B1: Produce reliable new information on geologic hazards in areas at risk of economic losses and casualties from disasters** Target #1: FY07 Target: One report on geologic hazards Measure #1: Number of peer-reviewed reports or maps published during the fiscal year that provide improved assessment of geologic hazards that pose significant risks to public safety.

End Results	Strategies to Achieve Results
C: Timely responses to all public & agency requests for information and assistance on energy resources, mineral resources, geologic hazards, and engineering geology Target #1: FY07 Target: 100 percent response to requests for geologic information or assistance by date requested Measure #1: Percentage of timely responses during the fiscal year relative to the total number of requests.	**C1: Provide improved public outreach and education regarding the geology of Alaska** Target #1: FY07 Target: Ten public presentations on the geology of Alaska Measure #1: : Number of events during the fiscal year that involve preparing and manning public displays, speaking at or teaching classes, and delivering presentations about the geology of Alaska.

End Results	Strategies to Achieve Results
D: Improved public access to nonproprietary rock samples and to the corresponding processed samples in support of private-sector resource exploration and geological education Target #1: FY07 Target: 100 percent satisfied users of the Geologic Materials Center Measure #1: Percentage of satisfied users of the Geologic Materials Center sample archives based on written evaluations.	**D1: Provide increased availability of processed samples at the Geologic Materials Center** Target #1: FY07 Target: 3,000 new processed samples Measure #1: Increase in total GMC processed collection (microfossil/petrographic slides, data reports), which increases available exploration data to industry, academia, and government agencies.

Major Activities to Advance Strategies

- Conduct field-geologic and laboratory studies needed to develop geologic maps and reports on the geology of Alaska
- Develop energy basin geologic reports including reservoir and source rock characterization, paleontological, and structural cross sections
- Publish minerals-related geologic reports, occurrence maps, geochemical data, geochronologic reports, structural cross sections, and databases
- Deliver presentations at public and industry forums to disseminate new information and improve understanding of energy related geology
- Respond to public & agency requests for information on energy resources, mineral resources, and geologic hazards
- Conduct and publish airborne geophysical surveys
- Publish annual Mineral Industry Summary Reports
- Deliver presentations at public and industry forums to disseminate new information on mineral and economic related geology
- Publish maps and reports on placer-mineral and construction-materials resources
- Publish maps and reports on the hazards associated with volcanoes, tsunamis, landslides, and other hazards
- Deliver presentations to improve public understanding of geologic hazards
- Design and maintain a Web site to provide online access to Alaska geologic data and publications
- Maintain and organize an archive of publicly accessible geologic samples from industry, government, and academia.
- Respond to legislative and administration requests for information and assistance on geological issues

Major Activities to Advance Strategies

- Develop and maintain an enterprise database of geospatially referenced geological and geophysical information

FY2008 Resources Allocated to Achieve Results

FY2008 Component Budget: $6,542,500

Personnel:	
Full time	39
Part time	0
Total	39

Performance Measure Detail

A: Result - Hard-copy and digital geologic reports and maps for use in exploring for and managing energy and mineral resources and for mitigating geologic hazards

Target #1:FY07 Target: 700 requests filled for hard-copy geologic publications.
Measure #1: Number of requested geologic publications delivered during the fiscal year.

Requests filled for hard-copy geologic publications

Fiscal year	Target	Result
2000	Not established	9,494
2001	Not established	4,165
2002	Not established	1,480
2003	Not established	1,243
2004	Not established	2,513
2005	Not established	979
2006	700	938
2007	700	

Analysis of results and challenges: The products of DGGS's field-geologic and geophysical studies are technical reports, geologic & geophysical maps, and digital datasets. Each year, the division collects field data for several areas, totaling several hundred square miles in area, analyzes those data, and publishes the products. Detailed published geologic and geophysical maps at scales needed for resource exploration, land-use management, and geologic-hazards assessment are scattered geographically and currently available for less than 10 percent of the state, but DGGS's field programs are gradually increasing that figure. DGGS prioritizes the selection of new mapping areas in consultation with other state agencies, appropriate state boards and commissions, industry resource-interest groups, and other stakeholders. Information about types of data collected, amount of area covered, and types of products DGGS generates is available in the Missions & Measures details.

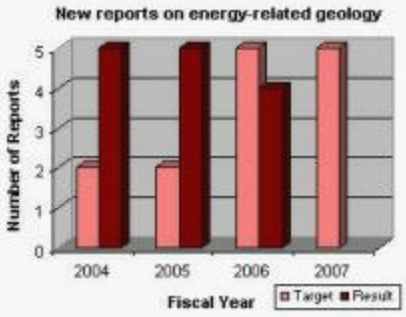
Although DGGS has made all of its geologic and geophysical reports and maps available online since FY 2000, some users still prefer to receive these products in hard-copy formats. Rather than printing reports and maps in large numbers for distribution as was the practice in years past, hard copies are now printed on demand, with only a few copies kept on the shelves to fill orders or over-the-counter sales. Distribution of hard-copy publications has decreased dramatically during the past six years, but now appears to be leveling off. In FY2004, DGGS had a "fire sale" to reduce the excess hard-copy publications on the shelves, hence the peak in distribution that fiscal year. See also the analysis of results and challenges for Result B, "Timely online delivery of geological and geophysical information," which includes a graph comparing hard-copy distribution with online information accesses.

A1: Strategy - Produce timely and reliable new energy-related geologic information in areas of poor geologic understanding and high energy resource potential, for both resource development and rural energy consumption

Target #1: FY07 Target: Five reports on energy-related geology of state-interest lands
Measure #1: Number of new peer-reviewed geologic reports published during the fiscal year that assist the energy industry and state management agencies in developing conventional energy resources on state-interest lands.

New reports published on energy-related geology

Fiscal year	Target	Result
2004	2	5
2005	2	5
2006	5	4
2007	5	



Analysis of results and challenges: Dissemination of detailed geologic knowledge is critically important for responsible resource development. This information must be the result of the most modern analyses and incorporate all available data in order to identify frontier areas of energy exploration on state lands. A critical component of this effort is in the form of published reports on a wide range of geologic disciplines.

Target #2: FY07 Target: One report on unconventional gas resource potential of state-interest lands
Measure #2: Number of new peer-reviewed reports or datasets released during the fiscal year that provide geologic information on unconventional gas resources.

Reports released on unconventional gas resources

Fiscal year	Target	Result
2004	2	2
2005	2	1
2006	1	0
2007	1	

Analysis of results and challenges: An emerging frontier of resource development is unconventional energy. Examples of this potential include low permeability reservoirs, gas hydrates, coal, coal bed methane, and geothermal. This target is not only important for developing commercial energy sources, but also for the energy challenges faced in rural Alaska. DGGS will remain committed to acquiring and publishing pertinent geologic data concerning both the developed and rural areas of Alaska, especially in the light of energy shortfalls and commodity price increases. As of the end of FY2006, one report had been completed but was still in review and editing.

Target #3: FY07 Target: Six presentations on energy-resource geology
Measure #3: Number of technical presentations made to industry, public, and government sectors during the fiscal year on energy-resource evaluations.

Technical presentations on energy resources

Fiscal year	Target	Result
2004	Not established	10
2005	Not established	17
2006	6	23
2007	6	

Analysis of results and challenges: An important venue for releasing timely information for resource development and regulations is through public presentation at both local and national technical conferences. This avenue is often the most cost-effective and timely method of disseminating new findings to the broadest audience of end-users. Significant effort is placed on this method of knowledge transfer and will be followed up

by publication of data and interpretations. Because new presentation opportunities arise during each fiscal year, DGGS generally far exceeds its target for this important outreach method.

Target #4: FY07 Target: 525 square miles of published, energy-related geologic mapping
Measure #4: Number of square miles of new, peer-reviewed, energy-related bedrock geologic mapping published during the fiscal year.

Square miles of new energy-related geologic mapping

Fiscal year	Target	Result
2004	200	0
2005	200	0
2006	240	0
2007	525	

Analysis of results and challenges: The publication of mapped geologic data in areas of high energy resource potential is critical for attracting new industry players and providing detailed information for government, academia and exploration companies. DGGS did not meet its published target in FY05 or FY06. 524 square miles of mapping was completed in 2005 and is currently submitted for publication in FY07. Significant personnel changes in the energy section, as well as the back-log created for publication staff were the major challenges faced during this period. Completion of the re-structuring of the energy program, and a focused effort on the publication back-log are the primary goals for FY07.

A2: Strategy - Produce timely and reliable new minerals-related geological and geophysical information in areas of limited information and high minerals resource potential

Target #1: FY07 Target: 240 square miles of published, minerals-related bedrock geologic mapping
Measure #1: Number of square miles of new, peer-reviewed, minerals-related bedrock geologic maps published during the fiscal year.

Square miles of published minerals-related geologic mapping

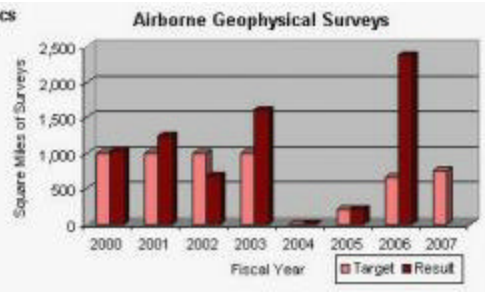
Fiscal year	Target	Result
2004	200	124
2005	200	268
2006	130	0
2007	240	

Analysis of results and challenges: The publication of mapped geologic data in areas of high minerals resource potential is critical for attracting new industry players and providing detailed information for government, academia and exploration companies. DGGS minerals section geologists have developed a methodology for increasing bedrock geological mapping by use of pre-flown remote sensing data to help identify poorly exposed bedrock data. DGGS has usually exceeded its targets, which vary year to year based on available funding and logistics costs in the area mapped. However, for FY06, final publication of the mapping done in calendar year 2005 was not possible by the end of the fiscal year. The maps will be published in FY07.

Target #2: FY07 Target: 750 square miles of published minerals-related airborne geophysical maps
Measure #2: Number of square miles of completed new airborne geophysical maps of minerals-interest lands published during the fiscal year.

Square miles of minerals-related airborne-geophysics

Fiscal year	Target	Result
2000	1,000	1,032
2001	1,000	1,240
2002	1,000	671
2003	1,000	1,612
2004	0	0*
2005	200	210
2006	650	2,382
2007	750	



Analysis of results and challenges: Much of Alaska's minerals potential lands have poorly exposed geology

due to tundra and tree cover. Advancement in geophysical data acquisition has shown that much of this poorly exposed bedrock can be identified using aerial geophysical surveys and, in combination with ground-based geologic mapping, can provide reliable information for mineral resource assessment. Less than 20% of potential mineral bearing lands have been surveyed, and DGGS is committed to prioritizing and finishing the acquisition of this important data. Funding for this work has historically been sporadic and partially dictates the amount of yearly coverage possible. Available equipment and personnel constraints also play major rolls in our ability to gather data. *For example, in FY04, CIP funding was insufficient to support new airborne-geophysical surveys, so no new data were acquired. However, during FY04, DGGS updated 763 square miles of previously collected data to meet modern standards. The FY06 target was 650 square miles of published airborne geophysical maps, compared to the FY05 target of 200 square miles. The actual total geophysical survey area flown and released in FY06 for mineral-interest lands far exceeds the FY06 target because it includes 1,447 square miles of survey flown over minerals-interest lands in southern NPRA under Bureau of Land Management funding. An additional ~3,110 square miles was flown under separate CIP funding for the Alaska Highway corridor, but that is not included in the total here because the corridor is not specifically mineral-interest land.

Target #3: FY07 Target: 240 square miles of published, placer-mineral related geologic mapping

Measure #3: Number of square miles of new surficial geologic maps published during the fiscal year that provide geologic information on placer-mineral potential and/or construction-materials resources.

Square miles of published placer-mineral geologic maps

Fiscal year	Target	Result
2004	200	0
2005	200	0
2006	130	268
2007	240	

Analysis of results and challenges: The publication of mapped geologic data in areas of high placer-minerals resource potential is critical for providing detailed information for government, academia and explorationists. This information is also pertinent for land selection and land-use management. Although this resource has historically seen significant reduction in activity based on environmental concerns and commodity pricing, new techniques, environmental remediation standards, and higher commodity prices has renewed interest in the resource. In FY06, DGGS completed the publication of 284 square miles of field mapping that was done in 2004. The remaining unpublished maps are currently in review and editing.

Target #4: FY07 Target: Three datasets of minerals-related geologic information made available online

Measure #4: Number of legacy or private-sector datasets released during the fiscal year that provide minerals-related geologic information.

Minerals-related geologic datasets

Fiscal year	Target	Result
2004	1	6
2005	1	4
2006	3	28
2007	3	

Analysis of results and challenges: The advent of the digital information age has placed significant demand on information availability and feasibility of warehousing hardcopy documents. As a result, a significant body of data in the public and private sectors is at risk of loss due to budget constraints and physical space requirements. DGGS has been employing considerable effort to recover and transfer these documents to digital format and provide them electronically in order to capture the wealth of information available, and distribute it to a broader user base. DGGS made significant progress on this effort in FY06 and consequently far exceeded the target.

Target #5: FY07 Target: Two reports on the Alaska minerals industry

Measure #5: Number of reports published during the fiscal year providing statistical information on Alaskan mineral industry.

Reports on Alaska mineral industry statistics

Fiscal year	Target	Result
2004	2	2
2005	2	2
2006	2	2
2007	2	

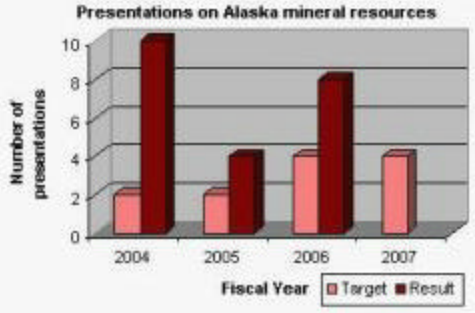
Analysis of results and challenges: An important source of minerals information can be obtained through the statistical study of industry trends and information. DGGS, in collaboration with DML&W and Department of Commerce, Community, and Economic Development compiles, publishes, and distributes this information for both governmental and industry use. This document is widely used and considered a critical source of information for planning.

Target #6: FY07 Targets: Four presentations on Alaska mineral-resource potential

Measure #6: Number of technical presentations made to industry, public, and government sectors during the fiscal year on mineral-resource potential and the status of the Alaskan mineral industry.

Presentations on Alaska mineral-resource potential

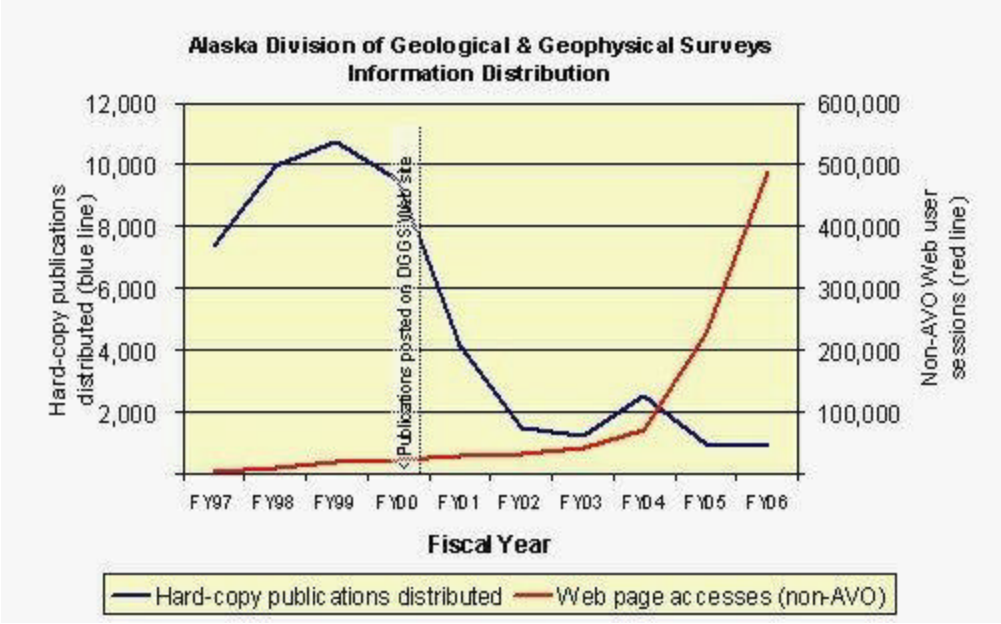
Fiscal year	Target	Result
2004	2	10
2005	2	4
2006	4	8
2007	4	



Analysis of results and challenges: An important venue for releasing timely information for resource development and regulations is through public presentations at both local and national technical conferences. This avenue is often the most cost-effective and timely method of disseminating new findings to the broadest audience of end-users. DGGS places significant effort on this method of knowledge transfer and will follow up by publishing data and interpretations.

B: Result - Timely online delivery of geological and geophysical information to support resource development, attract new industry and provide pre-disaster hazard mitigation for continued economic growth

Target #1:FY07 : 2 million visits (user sessions)
Measure #1: Number of users requesting information and data from the DGGS and AVO Web sites.



Total DGGS+AVO user sessions

Fiscal Year	Result	Target
FY 2003	Not tallied	Not Established
FY 2004	248,806	Not Established
FY 2005	1,670,802	Not Established
FY 2006	5,789,148	280,000
FY 2007		2,000,000

Analysis of results and challenges: Dissemination of information via the web has seen a dramatic increase over the past 8 years. This is especially true of detailed technical reports and large datasets that were previously difficult to obtain outside a local distribution center. Although the initial development costs are high, the dramatic decrease in hardcopy requests, as well as the much wider distribution of information will pay large dividends in the form of increased knowledge transfer to a much broader base of users. DGGS has focused a significant effort on developing and maintaining this service, and as a result, has seen a dramatic increase in geologic data inquiries via the internet over the past 3 years. Our FY06 target for total (DGGS+AVO) user sessions was far exceeded as a result of the eruption of Augustine Volcano and the resulting public inquiries to the Alaska Volcano Observatory (AVO) web site, which DGGS manages (see table). It was the first volcanic eruption in history that the public could monitor in real time via the Internet. DGGS is committed to continuing and improving this important service. The graph gives a visual comparison between the decline and leveling off of hard-copy publication distribution over the past eight years (blue line) and the dramatic increase in online user sessions (red line; only non-AVO sessions are shown on the graph because we did not begin tallying AVO user sessions separately until FY04). Note that the scales are vastly different; annual hard-copy distribution peaked at around 11,000, whereas annual Web user sessions are measured in the hundreds of thousands (millions when we include AVO).

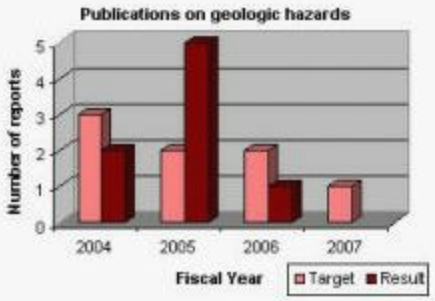
B1: Strategy - Produce reliable new information on geologic hazards in areas at risk of economic losses and casualties from disasters

Target #1:FY07 Target: One report on geologic hazards

Measure #1: Number of peer-reviewed reports or maps published during the fiscal year that provide improved assessment of geologic hazards that pose significant risks to public safety.

Reports or maps published on geologic hazards

Fiscal year	Target	Result
2004	3	2
2005	2	5
2006	2	1
2007	1	



Analysis of results and challenges: Public safety and preventing economic disasters caused by natural phenomena are distinctly tied to our understanding the risks associated with the complex geology in Alaska. Mitigation of these risks can only come about through detailed mapping and understanding of the natural processes, and timely distribution of that information to the public and government planners. Increasing population and development in Alaska create significant demands for acquiring geologic data and distributing it in a timely fashion. Completed in FY06 was the development of a geologic-hazards Web site for the Alaska Coastal Management Program. DGGS will continue in its attempt to keep pace with the growing need for information through collaborative projects, publication, Web materials, and community outreach.

C: Result - Timely responses to all public & agency requests for information and assistance on energy resources, mineral resources, geologic hazards, and engineering geology

Target #1:FY07 Target: 100 percent response to requests for geologic information or assistance by date requested

Measure #1: Percentage of timely responses during the fiscal year relative to the total number of requests.

Percent timely responses to requests for geologic information

Fiscal year	Target	Result	Responses
2004	Not established	--	Not recorded
2005	100%	100%	702
2006	100%	100%	2,215
2007	100%		

Analysis of results and challenges: Current, timely geologic information is critical to public safety scientific organizations, resource planners, land managers, and developers. Regardless of the amount of information gathered, the distribution of that knowledge is key in providing the desired outcome. The significant increase in 2006 is primarily the result of responding to requests for information on the eruption of Augustine Volcano in early 2006, but also includes increased requests for information on minerals and energy resources as a result of increased exploration for those commodities. The division is committed to continuously providing a 100% timely response to requests for information.

C1: Strategy - Provide improved public outreach and education regarding the geology of Alaska

Target #1:FY07 Target: Ten public presentations on the geology of Alaska
Measure #1: : Number of events during the fiscal year that involve preparing and manning public displays, speaking at or teaching classes, and delivering presentations about the geology of Alaska.

Public presentations on the geology of Alaska

Fiscal year	Target	Result
2004	Not established	12
2005	10	40
2006	10	52
2007	10	

Analysis of results and challenges: Public awareness and knowledge of the division's activity and database is paramount to success of the organization's mission. Although the web site is an important tool to that end, the power of physical presence at public forums cannot be underestimated. DGGS employs significant effort in presenting geologic knowledge in a wide range of public venues including schools, trade shows and community meetings. The number of presentations made reflects the commitment to that outreach.

D: Result - Improved public access to nonproprietary rock samples and to the corresponding processed samples in support of private-sector resource exploration and geological education

Target #1:FY07 Target: 100 percent satisfied users of the Geologic Materials Center
Measure #1: Percentage of satisfied users of the Geologic Materials Center sample archives based on written evaluations.

Percent satisfied users of the Geologic Materials Center

Fiscal year	Target	Result	Evaluations received
2004	Not established	--	Not recorded
2005	100%	100%	12
2006	100%	100%	6
2007	100%		

Analysis of results and challenges: A significant amount of effort and capital has been spent over the past 60 years to obtain rock and mineral samples throughout Alaska. Some of these samples are irreplaceable, or currently very difficult and expensive to acquire. The Geologic Materials Center archives geologic samples and provides a wide range of users (industry, government, academia, and public) access for identifying new resource prospects and increasing our geologic knowledge of the state. This is all done under a very limited budget in a sorely inadequate and outdated facility. It is very important that this access is user-friendly and allows for new technological analyses to be performed in a timely manner. Although satisfaction is currently 100%, a noted challenge has been to document user feedback through written evaluations. There were 470 visitations to the facility in FY06. Clearly we need to improve our efforts to get larger numbers of user evaluations. DGGS will initiate new methods of acquiring that information and making improvements where warranted.

D1: Strategy - Provide increased availability of processed samples at the Geologic Materials Center

Target #1:FY07 Target: 3,000 new processed samples

Measure #1: Increase in total GMC processed collection (microfossil/petrographic slides, data reports), which increases available exploration data to industry, academia, and government agencies.

Growth of processed-sample collection

Fiscal year	Target	Result	# Samples
2004	Not established	Not recorded	Not recorded
2005	10%	5%	12,314
2006	10%	1%	2,666
2007	3,000 spls		

Analysis of results and challenges: Constant access to new geologic samples is very important to increasing our knowledge of Alaska's complex geology. Specialized sub-samples of the GMC collection provide information to geologists that can mean significant economic impact to the state. DGGS is committed to providing those specialized samples, but budget and personnel constraints limit our ability to significantly increase the archived collection. The target increase has not been reached in two consecutive years, hence a more realistic target of 3,000 new processed samples annually was implemented for FY07.

Key Component Challenges

Reduction of Federal Funding for Geologic Work

- Federal budgets have shown recent trends toward reduction across all levels of government. Examples of proposed presidential budget cuts that will directly affect DGGS include: 1) zeroing out of the Department of Interior energy and minerals related programs, and 2) USGS Statemap cooperative geologic mapping program cuts over the last few years, eroding our ability to leverage state funding and continue a full geologic mapping program on state lands. This erosion phenomena is nearly ubiquitous for all of our collaborative federal programs.
- Recent changes in the chairmanship of US congressional committees and reduction in the number of so-called "ear marks" have had a dramatic affect on DGGS' ability to secure funds through special appropriations. DGGS submitted four federal appropriations requests (totaling $9.7 million) over the last two years, but we were discouraged by our congressional delegation to submit any additional requests in FFY07. We will again submit requests for the FFY08 budget, but the growing federal deficit will likely continue to have a negative affect on our overall program budget.
- Many DGGS programs that are critically important to the state and allow fulfillment of the division's mission are partially funded by federal dollars via grant proposals and collaborative work. For example, the FY06 DGGS expense budget was nearly 60% federal receipts and included funding for the Minerals & Data Information Rescue in Alaska (MDIRA) project, Statemap geologic mapping programs, Alaska Volcano Observatory collaborative program, mineral-resources identification, and other collaboration with MMS, BLM, and USGS. Some of this federal funding is being reduced or eliminated.
- Identifying and securing new funding sources, improving our documentation and outreach effort, and reallocating personnel to critical areas will be a key component of the coming fiscal year.

Updating and Improving the Geologic Materials Center

- A repository of rock core, samples, and data is critical for any state (or country) that relies on resource development as a key component of its economy
- The Geologic Materials Center (GMC), located in Eagle River, is Alaska's rock data repository and is the "first stop" for any industry or academic researcher who is attempting to identify and understand the complex geology of the numerous resource-rich areas throughout Alaska.
- Providing efficient and comprehensive access to these data is critically important for viable exploration programs, for both seasoned Alaska explorers and new companies that are trying to identify potential exploration areas
- Although the current condition of the GMC is being maintained, the facility is more than 100% over its designed sample-storage capacity, and is very poorly designed to handle the regular and frequent requests for reasonable access to the material.
- The GMC currently utilizes 55 portable containers as temporary storage facilities for recent sample acquisitions. These shipping containers are unlighted, unheated and house thousands of feet of core, some of which will disintegrate with repeated freeze-thaw cycles. It is important to note that this collection represents hundreds of millions of dollars of acquisition and preservation costs and is in significant risk of damage or loss.
- The core and sample observation areas are essentially unusable for confidential work and examination of more than a few feet of core length. An exploration company's ability to keep their activities confidential is critical to exploration success in a fiercely competitive environment. Often the core must be taken off-site for substantial projects, creating a significant security threat to the unique core, and an expensive alternative for the exploration company. All of these factors could result in a reluctance by users to make use of the facility because they must go through the onerous effort of transporting and unnecessarily handling the material at risk.
- A facility concept study, funded through a special federal appropriation, was finished in July of 2006 (http://www.dggs.dnr.state.ak.us/download/gmc_concept_study_august_2006.pdf). The study identified the most feasible options for design and provided cost estimates for various configurations. It will be the basis for an architectural and engineering design of the facility.
- A significant challenge for DGGS over the near term will be to convince industry, lawmakers, and government officials of the importance of upgrading this facility and providing the funding necessary to keep this critical data source safe and accessible. We plan to include a request for Congressional appropriations in the FFY08 budget to leverage state funding and help build a new facility.

Sustained High-level Commodity Prices

- Although this is very good news for State revenue as a whole, increased price structure in most natural resource commodities presents a challenge for DGGS to meet demands for geologic information.
- Dramatic increases in minerals and oil & gas exploration efforts by independent industry puts a noticeable strain on all facilities and programs. Our effort to provide critical geologic data to these entities will be challenged as more and more end-users of our products demand quicker and more comprehensive response. The main challenges will arise from a static state budget and our ability to plan for the rapidly changing needs of the resource development community, and to gather the required field information in the face of rising operating costs.

- Spikes in the exploration cycle also create a situation where high-paying jobs become abundant, and opportunities for experienced geoscientists become commonplace. A significant challenge for DGGS will be our ability to attract and retain key personnel in this very competitive environment.

Serving the Geologic Needs of Rural Alaska Communities

- High energy prices have had a significant on the economies of rural Alaska and threaten the viability of rural infrastructure. The risk of some rural customers having their electricity shut off because of delinquent bills is in the news.
- Many remote areas of the state lack sufficient geologic information on potential alternate forms of geologic energy such as shallow natural gas, coal, geothermal, and conventional gas.
- Continued population growth and development in Alaska will continue to encroach on areas with heightened geohazard risk.
- The documented warming of the arctic climate will create dramatic changes in many surficial processes that until recently have remained unchanged for many decades. Glacial melt-back and surges, changes in permafrost, heightened coastal and river erosion are just a few of the potential hazards that will affect many communities and infrastructure around the state.
- Recent media coverage of these phenomena points out the necessity of acquiring geologic data, producing maps, and identifying risks?information that can be used in both short and long term planning. In some cases it will be critical to have this data available in a crisis situation.
- DGGS will be challenged to provide pertinent and timely data on numerous fronts, and plans to initiate a long-term program that addresses the occurrence of locally available energy sources and geologic hazards.

Geologic Mapping and Field Operations Cost:

- Rising costs of field operations and a tightening of federal funding sources decrease DGGS's ability to accomplish its mission.
- Much of DGGS's most valuable work in Alaska is done in the frontier areas of the state. Our work provides the geologic framework that is used by the private sector to guide new energy and mineral exploration investments. Providing this kind of information means that our field work is moving farther away from the state's limited transportation infrastructure. This alone adds significantly to logistical supply and operational costs.
- During the past 5 years, DGGS field operation costs have risen about 50 percent for geologic mapping and over 40 percent for airborne geophysical surveys.
- All remote field programs require fixed-wing and helicopter support for daily operations and these costs continue to rise dramatically, most specifically associated with increased fuel costs.
- A significant and continued challenge will be to provide comparable levels of this critical geologic research, while limiting the impacts of a flat or declining budget.

Limited Detailed Geologic Mapping Coverage

- Alaska is a unique place in the United States. Geologically, Alaska contains by far the most diverse distribution of geologic provinces and processes.
- When compared to any other state, the geology in Alaska is critically under-mapped at a reasonable scale for planning and resource exploration.
- The current coverage of 1:63,360-scale geologic maps is less than 10% of the total area of the state. No other state in the United States is so poorly understood geologically. This limited map coverage, when combined with escalating field costs and declining budgets, presents a major challenge to DGGS in its mission to identify potential new resource areas and foster responsible development.
- DGGS will continue to look for innovative ways to attain its goal of mapping the critical areas of the state and will work towards securing both governmental and industry funds in this effort.

Commercial Energy:

- New oil and gas exploration in Alaska is increasingly being undertaken by smaller, independent petroleum companies that lack the depth and geologic experience of the major oil companies. The independent companies rely heavily on publicly available geologic data on Alaska's oil and gas basins. In addition to providing this information, DGGS makes available the opportunity for these companies to sponsor and participate in field studies that provide a better understanding of the geologic framework of potential hydrocarbon sources in active and future lease areas. To this end, we actively seek both independent and major company partners in this program through frequent meetings with industry groups.
- DGGS responds to many inquiries from companies seeking the geologic information that will assist their exploration efforts in Alaska. The challenge for DGGS is to meet the geologic needs of accelerated leasing and exploration licensing with limited staff and financial resources. We have redirected internal resources toward oil & gas geology to

the extent possible, and have been successful acquiring external funding from the federal government and industry. One way in which we have met these challenges with minimal increase in permanent state staff is to involve contract geologists, university faculty, student interns, industry partners, and occasional nonpermanent employees in multi-organization cooperative geologic projects. A modest increase in the FY08 budget for this program will allow DGGS to provide the exploration-critical geologic data to meet the needs of the state's accelerated leasing schedule.

Infrastructure Projects:

- Alaska may be on the threshold of a major development cycle similar in scale to the construction of the trans-Alaska oil pipeline. There are ongoing negotiations between industry and government to seek ways to expedite the construction of a natural-gas delivery system to the Lower-48 and possible extension of the Alaska Railroad to Canada. A fundamental and prudent first step in undertaking infrastructure development enterprises of this magnitude is a comprehensive, public geologic-resource evaluation and geologic-hazard assessment of the primary land corridors through which such construction must pass. Such assessments should be made prior to finalizing detailed alignments and prior to detailed geotechnical engineering assessments of those alignments and as a basis for evaluating permit applications. By statute AS 41.08 DGGS is charged to determine the potential geologic hazards to buildings, roads, bridges, and other installations and structures as well as inventorying the state's geologic resources, but current and projected funding is inadequate to fully meet this mandate.
- Prior knowledge of the kind and extent of geologic hazards affecting these projects is the first step in reducing future economic losses and casualties from the hazards. Such knowledge can be factored into design criteria to improve public safety, decrease long-term maintenance costs, and decrease the cost of reconstruction resulting from encountering unforeseen obstacles. Additionally, knowledge of geologic resources in the vicinity of the transportation corridors may improve their projected economic feasibility and identify sources of construction materials.

Limited public understanding of geoscience and the need for improved outreach

- Earth processes have a tremendous impact on everyday life, especially in Alaska where the state is economically dependent on the development of geologic resources and where active earth processes create significant hazards, such as earthquakes and volcanoes. Yet the public has limited understanding of these processes and the importance of reliable earth-science information for making decisions about natural-resource development, land management, and environmental protection.
- Scientists typically do a poor job of communicating their knowledge and information to the nontechnical public. We are keenly aware of this problem at DGGS, where we generate geologic reports and maps that often are understandable only by people who have relatively advanced scientific background. Yet historically our public-outreach efforts, such as the current MapTEACH program, show us that educators, students, and the general public are enthusiastic about learning about earth processes, and they quickly realize the importance of this knowledge for making land-management decisions and understanding natural-resource issues in their local communities.
- DGGS must improve its outreach efforts by generating products that are more "user friendly" to the nonscientific public, while maintaining the scientific quality and detail necessary for providing technical users in industry, government, and academia the information they need to guide exploration programs, make wise land-management decisions, and improve public safety from geohazard risks. Improvements can be in the form of new nontechnical newsletters and reports, geoscience presentations for general audiences, and media appearances. Current DGGS staffing is inadequate to make significant increases in public outreach without jeopardizing the quantity and quality of the products and services it currently provides.

Significant Changes in Results to be Delivered in FY2008

There are no significant changes anticipated. See our M&M's for the results to be achieved.

Major Component Accomplishments in 2006

Energy Resources

- Conducted structural and stratigraphic studies on the North Slope in collaboration with the Division of Oil & Gas and U.S. Geological Survey, collecting geologic data relevant to assessing the **hydrocarbon potential of the Brooks Range foothills**. This work is funded in part through contributions from oil and gas companies.
- Initiated new **bedrock geologic mapping** for a one-year project in the **Kavik River and Canning River areas** in the Brooks Range foothills region of the eastern North Slope. The new bedrock mapping is conducted in conjunction with ongoing petroleum resource evaluations and the federal STATEMAP Program for use by industry and government in lease sales on state and federal lands.

- Conducted **detailed outcrop studies** at remote locations along the **Colville River** to investigate the sequence stratigraphy and depositional variation of the Nanushuk Formation, an objective for natural gas exploration on state and federal lands in the North Slope foothills.
- Prepared a **field tour for industry geologists** at Kavik camp to present new technical results bearing on the petroleum geology of northern Alaska, including conducting a two day geologic tour of field localities illustrating structural and stratigraphic relationships that are key to oil and gas exploration.
- Initiated a multi-year program of geologic investigations of coal-bearing strata in **Cook Inlet basin** designed to catalyze hydrocarbon exploration activity by providing relevant geologic data in the public domain. Work in FY06 included a three-day field trip illustrating the tectonic and stratigraphic setting of oil and gas accumulations in the basin.
- Completed the second year of a three-year field program as part of a federally funded (USDOE) geologic evaluation of **petroleum potential in the Bristol Bay and Alaska Peninsula region** relevant to the newly established, annually scheduled areawide lease sales initiated in October, 2005.
- Completed summary reports on 2005 field studies and on the sedimentology, stratigraphy, and hydrocarbon reservoir-source rock potential using surface and subsurface data from Bristol Bay Basin and Alaska Peninsula.
- Completed a summary report of investigations addressing **reservoir characterization of the Yukon Flats Basin**.
- Completed a summary report on the geology of the 2004 **Fort Yukon slim-hole drill core** as part of a U.S. Department of Energy-funded project to assess shallow gas potential in rural Alaska.
- Evaluated **coal deposits near Eek River** in the Bethel region during the final year of a three-year study of remote coal occurrences in Southwest and Southeast Alaska as part of DGGS participation in the USGS National Coal Resource Database System program. This program is designed to record all known coal occurrences in Alaska and archive the information into a single, readily accessible database. The final report for this study will be released in FY07.
- Co-organized four **technical sessions related to Alaska's oil and gas basins** at the joint meeting of the American of Association of Petroleum Geologists-Geological Society of America, *North to Alaska: Geoscience, Technology and Natural Resources*, held in Anchorage, May 2006. Also at this conference, co-organized a Society of Petroleum Engineers round table discussion focusing on Alaskan issues facing oil and gas independent companies and consultants.

Mineral Resources

- In collaboration with the Alaska Department of Commerce, Community and Economic Development, completed ***Alaska's Mineral Industry*** (Special Report 60), an authoritative annual report of statewide mining activity.
- Completed analysis and draft publication of the bedrock- and surficial-geologic mapping of 130 square miles of the **Liberty Bell airborne-geophysical survey tract**. The publication will be released during the first half of FY2007.
- Initiated the ground-truth bedrock- and surficial- geologic mapping project of 300 sq mi of the **Council mining district** airborne-geophysical survey tract.
- Released **airborne geophysical surveys** of 918 sq miles of mineral districts near Fairbanks, Richardson, and Black Mountain (near the Pogo gold deposit) in Interior Alaska.
- Released airborne geophysical surveys of 1447 sq mi of the **southern National Petroleum Reserve-Alaska (NPRA)**. This project is funded by the U.S. Bureau of Land Management and data will be used to aid land management recommendations and decisions.
- Released airborne geophysical surveys of 3116 sq mi along part of the **Alaska Highway Corridor** between Delta Junction and the Canadian Border. The survey parameters were designed to help delineate potential geologic hazards and surficial geologic resources in the important transportation corridor.
- Initiated airborne geophysical surveys of 602 sq miles of the **Bonnifield mining district** east of Healy in Interior Alaska.

Engineering Geology, Hazards, & Construction Materials

- Initiated geologic mapping and **geologic-hazards study of the proposed natural gas pipeline corridor** along the Alaska Highway within the area covered by the airborne-geophysical survey. The multi-year study includes bedrock- and surficial-geologic mapping; evaluation of geologic hazards such as potentially active faults, landslides, permafrost, and liquefaction; and identification of construction materials and mineral resource potential.
- Published surficial-geologic mapping of **268 square miles of the Council mining district** airborne-geophysical survey tract.
- Initiated surficial-geologic mapping project of an **additional 300 square miles of the Council mining district** airborne-geophysical survey tract.
- Supported the Alaska Coastal Management Plan (ACMP) by providing **natural hazards review** for the List of Expedited Consistency Reviews and State Authorizations Subject to the ACMP (the "ABC List") and a presentation on the **use of geologic maps for natural-hazard identification** at the annual ACMP Regional District Workshop.

- Completed year 2 of **MapTEACH** (*Mapping Technology Experiences with Alaska's Cultural Heritage*), a pilot project funded by the National Science Foundation (NSF) to develop an educational program for middle- and high-school students in Alaska emphasizing hands-on experience with geospatial technology (GPS, GIS, and remote sensing imagery) in conjunction with traditional activities and geoscience. The project is a collaborative effort with the University of Alaska Fairbanks and University of Wisconsin Madison.
- Led Alaska Volcano Observatory field studies at **Chiginagak Volcano**, Alaska Peninsula, focusing on natural acid crater lake drainage and its severe impact on Mother Goose Lake and King Salmon River.
- Conducted geologic field mapping at **Emmons Lake volcanic center** (including Pavlof, Pavlof Sister, Emmons, Hague volcanoes) and initiated new mapping at **Frosty Volcano**.
- Participated in a one-month long oceanographic cruise in the **western Aleutians** that imaged and sampled dozens of previously unknown submarine volcanoes.
- Participated in the response to 2005 unrest and 2006 eruption of **Augustine Volcano**, including serving as Media/Communications Coordinator on the AVO Augustine Crisis Response Team.
- Provided helicopter and ship purchasing and **logistical coordination** for Alaska Volcano Observatory (AVO) field operations. New geologic work and seismic network installations at Semisopochnoi and Little Sitkin volcanoes were a major effort. AVO now seismically monitors 30 of 51 active Alaska volcanoes.
- Maintained the **AVO internal and external World Wide Web sites**, including designing and implementing new automated ways to handle daily and weekly notices of volcanic activity, designing and implementing intra-observatory communication tools, and updating the public site. These pages have become crucial to daily monitoring of volcanoes and are technologically at the cutting edge worldwide.
- Expanded and further developed GeoDIVA (**Geologic Database of Information on the Volcanoes of Alaska**).
- As a member of the Consortium of US Volcano Observatories, participated in the development of the **National Volcano Early Warning System**, including chairing the working group writing the implementation plan for the National Volcano Data Center.

Geologic Information Management and Delivery

- Published 140 **new geologic maps** (127 geophysics, 13 geologic), 15 **new geologic reports**, and 7 **CD-ROMs** (all geophysics), including ***Alaska's Mineral Industry*** annual report for 2004, plus two newsletter issues and a pictorial calendar.
- Sold 634 **professional maps and reports**, distributed approximately 304 **free educational publications**, and responded to **more than 700 significant geologic information requests**.
- Continued the redesign of the **DGGS Web site** in accordance with new state standards for "look and feel" of State Web sites.
- Completed inventory, scanning, and Web distribution of USGS Alaska-related Open-File Reports, USGS folio map series, and MIRL reports for addition to the **Geologic & Earth Resources Information Library of Alaska** (GERILA) database, achieving another major objective of the federally funded Minerals Data & Information Rescue in Alaska (MDIRA) project.
- Implemented a new **metadata writing tool** to help make writing FGDC-compliant metadata documentation for digital geological and geophysical data products less time-consuming for geologists and project authors.
- Updated the **DGGS internal web site** to provide staff members with useful and current information regarding a variety of topics, including database documentation, metadata, publication processes, and major projects.
- Completed metadata documentation for 15 **legacy DGGS projects** and upgraded their products to current standards for inclusion in the Geologic & Earth Resources Information Library of Alaska (GERILA) database.
- Loaded geochemical data from 58 publications (originating from DGGS, USGS, and other Alaska-related outside publications) into the **DGGS WebGeochem application**, making them available for public download on the DGGS Web site. With this latest addition, WebGeochem contains 25,144 sample analyses from a total of 73 publications.
- Converted several static DGGS Web pages to dynamic, **database-driven pages**, including geophysics order forms, minerals-industry page, new reports, and pages within the Guide to Geologic Hazards in Alaska.
- Developed requirements and an operational plan for **digital distribution of DGGS data**. When programming is completed, the digital data distribution project will enable Web users to download digital geologic data, including spatial data and metadata, that are stored in GERILA.

Geologic Materials Center

- Hosted **470 visitations** to the Alaska Geologic Materials Center (GMC) in Eagle River by industry, government, and academic personnel to examine rock samples and processed materials. These visitations helped generate 3,580 new processed oil & gas related microscope slides, including the U. S. Geological Survey "Irv Tailleur" petrographic thin section collection of northern Alaska oil/gas wells, and 12 hard-rock mineral and oil & gas technical data reports.

- Received, stored, and inventoried one 40 ft truck trailer of hard-rock **mineral cores from the Westmin Resources Ltd. Zarembo Island 1996 project** ("Frenchy" claim) near Wrangell, which was provided by the US Forest Service through the Bureau of Land Management.
- In total, the GMC received **rock samples for over 24 oil & gas wells**, representing 166,964 feet of well samples, and 5 hard-rock mineral holes (the Zarembo Island prospect), representing 2,199 ft of core in 244 core boxes.
- Added one 40-foot metal shipping container with "roof supporting" metal shelving to the Alaska GMC. This adds 1,500 cubic feet of shelving space, for a new total of **55 40-foot containers** and three additional 20-foot metal containers at the GMC.
- Completed an audit and reinventory of the entire **Alaska Oil and Gas Conservation Commission well-sample collection** at the GMC.
- The **Alaska GMC Data Reports** are now available through the Alaska Oil and Gas Conservation Commission web site <http://aogweb.state.ak.us/weblink/>, along with a corresponding GMC Data Report Index.

Statutory and Regulatory Authority

AS 41.08

Contact Information

Contact: Robert Swenson, Deputy Director for Research
Phone: (907) 451-5001
Fax: (907) 451-5223
E-mail: robert swenson@dnr.state.ak.us

Geological Development
Component Financial Summary

All dollars shown in thousands

	FY2006 Actuals	FY2007 Management Plan	FY2008 Governor
Non-Formula Program:			
Component Expenditures:			
71000 Personal Services	2,916.9	3,480.3	3,938.8
72000 Travel	159.7	169.5	169.5
73000 Services	1,788.8	2,054.3	2,154.3
74000 Commodities	277.5	268.8	268.8
75000 Capital Outlay	28.4	11.1	11.1
77000 Grants, Benefits	0.0	0.0	0.0
78000 Miscellaneous	0.0	0.0	0.0
Expenditure Totals	**5,171.3**	**5,984.0**	**6,542.5**
Funding Sources:			
1002 Federal Receipts	1,823.6	2,204.6	2,204.6
1004 General Fund Receipts	2,225.8	2,517.1	3,581.4
1005 General Fund/Program Receipts	19.6	10.0	10.0
1007 Inter-Agency Receipts	328.2	358.7	83.7
1061 Capital Improvement Project Receipts	650.0	643.5	312.7
1108 Statutory Designated Program Receipts	124.1	250.1	350.1
Funding Totals	**5,171.3**	**5,984.0**	**6,542.5**

Estimated Revenue Collections

Description	Master Revenue Account	FY2006 Actuals	FY2007 Management Plan	FY2008 Governor
Unrestricted Revenues				
General Fund Program Receipts	51060	3.2	0.0	0.0
Unrestricted Total		**3.2**	**0.0**	**0.0**
Restricted Revenues				
Federal Receipts	51010	1,823.6	2,204.6	2,204.6
Interagency Receipts	51015	328.2	358.7	83.7
General Fund Program Receipts	51060	19.6	10.0	10.0
Statutory Designated Program Receipts	51063	124.1	250.1	350.1
Capital Improvement Project Receipts	51200	650.0	643.5	312.7
Restricted Total		**2,945.5**	**3,466.9**	**2,961.1**
Total Estimated Revenues		**2,948.7**	**3,466.9**	**2,961.1**

Summary of Component Budget Changes
From FY2007 Management Plan to FY2008 Governor

All dollars shown in thousands

	General Funds	Federal Funds	Other Funds	Total Funds
FY2007 Management Plan	**2,527.1**	**2,204.6**	**1,252.3**	**5,984.0**
Adjustments which will continue current level of service:				
-Funding source change to continue resource assessment at existing levels	605.8	0.0	-605.8	0.0
-Delete one-time-authorization for First FY2007 Fuel/Utility Cost Increase Funding Distribution	-6.4	0.0	0.0	-6.4
-Fund Source Adjustment for Retirement Systems Increases	171.4	-59.9	-111.5	0.0
Proposed budget increases:				
-Additional authorization for anticipated increased agreements for Cook Inlet Basin projects	0.0	0.0	100.0	100.0
-Add back authorization for First FY2007 Fuel/Utility Cost Increase Funding Distribution	6.4	0.0	0.0	6.4
-FY 08 Retirement Systems Rate Increases	287.1	59.9	111.5	458.5
FY2008 Governor	**3,591.4**	**2,204.6**	**746.5**	**6,542.5**

Geological Development
Personal Services Information

Authorized Positions			Personal Services Costs	
	FY2007 Management Plan	FY2008 Governor		
Full-time	39	39	Annual Salaries	2,386,410
Part-time	0	0	Premium Pay	1,693
Nonpermanent	10	4	Annual Benefits	1,761,418
			Less 5.08% Vacancy Factor	(210,721)
			Lump Sum Premium Pay	0
Totals	**49**	**43**	**Total Personal Services**	**3,938,800**

Position Classification Summary

Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total
Administrative Assistant	0	1	0	0	1
Administrative Clerk II	0	1	0	0	1
Administrative Manager I	0	1	0	0	1
Analyst/Programmer III	0	1	0	0	1
Analyst/Programmer IV	0	1	0	0	1
Cartographer III	0	1	0	0	1
College Intern I	0	4	0	0	4
Division Director	0	1	0	0	1
Geologist II	1	3	0	0	4
Geologist III	1	9	0	0	10
Geologist IV	1	8	0	0	9
Geologist V	0	3	0	0	3
Geologist VI	0	1	0	0	1
Micro/Network Spec I	0	1	0	0	1
Micro/Network Tech I	0	1	0	0	1
Natural Resource Tech II	0	1	0	0	1
Publications Spec III	0	1	0	0	1
Publications Tech II	0	1	0	0	1
Totals	**3**	**40**	**0**	**0**	**43**